



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,712	03/09/2001	Eugenia Kumacheva	107600	5107

7590 08/26/2003

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, VA 22320

EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
----------	--------------

1756

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,712

Applicant(s)

KUMACHEVA ET AL.

Examiner

Martin J Angebrannt

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35,36,46 and 48 is/are allowed.
- 6) ☒ Claim(s) 1-34,37-45 and 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1756

1. The response provided by the applicant has been read and given careful consideration.

Rejection not appearing below are withdrawn based upon the amendments and arguments of the applicant. Responses to the arguments of the applicant are presented after the first rejection to which they are directed. Basis for the resolution language describing the exposure of individual particles to photobleaching such that less than 25% of an adjacent particle is bleached is disclosed at [0014] in the specification. The use of two photon exposure for the photobleaching is disclosed. [0089] The lateral resolution of the beam is disclosed as 0.3 microns [0090].

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-34 and 37-45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalinina et al., "A 'Core-Shell' Approach to Producing 3D polymer nanocomposites", *Macromolecules*, Vol. 32 (1999) pp, 4122-4129, in view of Matsushita et al. '695 or Sekine et al. '629.

Kalinina et al., "A 'Core-Shell' Approach to Producing 3D polymer nanocomposites", *Macromolecules*, Vol. 32 (1999) pp, 4122-4129 teaches the three stage process for forming the core shell polymer composite is disclosed. The results of the variation of the conditions in terms of the volume fraction of the core and shell are disclosed in table 3. The use of photobleaching is also described with respect to reference 13 (page 4129). The use of crosslinking of the SFP to produce rigid shells with soft cores is disclosed. This would allow the core to be dissolved. The

Art Unit: 1756

exposure of the medium using the 488 nm line of an argon ion laser with a lateral resolution of 0.3 microns is disclosed. (page 4124, left column)

Sekine et al. '629 in example 1, where at least some of the resin forming the shell is found in the core and the result is dispersed in a PVA matrix.

Matsushita et al. '695 in example 1, where at least some of the resin forming the shell is found in the core and the result is dispersed in a polyester resin matrix.

It would have been obvious to one skilled in the art to modify the process of Kalinina et al., "A 'Core-Shell' Approach to Producing 3D polymer nanocomposites", *Macromolecules*, Vol. 32 (1999) pp, 4122-4129 by forming the liquid cores based upon the direction within the reference and then coating these in a matrix as taught by Matsushita et al. '695 or Sekine et al. '629 as is conventional in the art to adhere the particles to the substrate upon which they are coated, since the coalescence would not work with the rigid shell to produce the matrix (the capsules would rupture) and to use the result in the recording process described in Kalinina et al., "A 'Core-Shell' Approach to Producing 3D polymer nanocomposites", *Macromolecules*, Vol. 32 (1999) pp, 4122-4129 with respect to reference 13.

The argument that the formation of liquid cores is not taught is incongruent with the position that the formation of soft cores is taught. The fluidity may be an issue, but in the dissolution of the core at least, the presence of fluid cores is taught. The examiner adopts the position that the soft cores are fluid within the scope of the claims. The applicant is correct, that the two photon exposure process is not disclosed, the resolution of 0.3 microns taught in the instant specification at [0090] is specifically disclosed on page 4124, in the "studies of film morphology" section. The position is that if the same resolution is used in at least one dimension,

Art Unit: 1756

then at least one of the adjacent particles, above or below the target particle is not bleached more than the amount disclosed in the specification for the same conditions.

4. Claims 35,36,46 and 48 are allowable over the prior art as the use of the two photon exposure with the arrays particles described by the claims is not obvious in view of the prior art of record.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

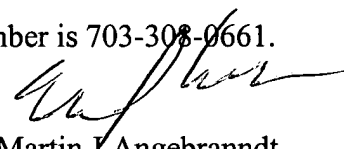
note new claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 703-308-4397. The examiner can normally be reached on Available Mondays-Thursday and alternative Fridays.

Art Unit: 1756

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J. Angebranndt
Primary Examiner
Art Unit 1756

August 22, 2003